

What is Claimed:

- 1 1. A method for detecting the presence of a residual amount of
2 corrosion inhibitor on a copper surface subjected to a cleaning solution containing a
3 corrosion inhibitor comprising exposing said copper surface to a reactant that will
4 attack said copper surface causing a pronounced color change of said copper surface,
5 said color change indicating an absence of said corrosion inhibitor on said copper
6 surface.
- 1 2. A method according to claim 1 including using a gaseous
2 reactant.
- 1 3. A method according to claim 2 including exposing said copper
2 surface to hydrogen sulfide gas.
- 1 4. A method according to claim 2 including introducing acetic acid
2 into a solution of sodium sulfide in deionized water at room temperature to generate
3 hydrogen sulfide gas as said reactant.
- 1 5. A method for determining the presence of residual corrosion
2 inhibitor on copper surfaces or copper components of a microelectronic device having
3 been subjected to a cleaning prior to a subsequent fabrication operation comprising:

4 including a sacrificial copper coupon or test piece in a group or batch of
5 said devices during said cleaning process;

6 removing said test piece from said batch and exposing said test piece
 7 to a gaseous reactant selected to react with said test piece to produce a visible color
 8 change of a surface said test piece in the absence of corrosion inhibitor on said
 9 surface of said test piece.

1 6. A method according to claim 5 including using hydrogen sulfide
 2 as said gaseous reactant.

1 7. A method according to claim 6 including producing said
 2 hydrogen sulfide gas by reacting acetic acid with an aqueous solution of sodium
 3 sulfide.